

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIRONOBU ABE

Appeal No. 1997-0799
Application 08/242,235¹

HEARD: November 15, 1999

Before THOMAS, DIXON, and GROSS, Administrative Patent Judges.
THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1 through 5, which constitute all the claims pending in the application.

¹ Application for patent filed May 13, 1994.

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Representative claim 1 is reproduced below:

1. A plasma-addressed liquid crystal display device,
comprising:

a liquid crystal cell having a plurality of data
electrodes therein;

a plasma cell associated with the liquid crystal cell and
having a plurality of discharge channels with discharge
electrodes, the liquid crystal cell and the plasma cell being
disposed spaced-apart with the direction of the discharge
channels transverse to that of the data electrodes and spaced
from each other:

a scanning circuit operable to control an application of
discharge pulses to said discharge electrodes in the discharge
channels by a row scan operation; and

a driving circuit provided to apply data voltages to the
respective data electrodes,

wherein said driving circuit includes means for
substantially eliminating an increase in voltage between said
discharge electrodes and said data electrodes during the
application of the discharge pulse.

The following references are relied on by the examiner:

Buzak et al. (Buzak)	5,313,223	May 17, 1994
	(filed Aug. 26, 1992)	

Iwama	5,349,454	Sep. 20, 1994
	(filed Apr. 22, 1993)	

Claims 1 through 5 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Buzak in view of Iwama.²

Rather than repeat the positions of the appellant and the examiner, reference is made to the briefs and the answer for the respective details thereof.

OPINION

We reverse.

Appellant's Background of the Invention in the early pages of the specification as filed as well as the initial teachings and showings in both references relied upon indicate that the structure recited in independent claim 1 on appeal excluding the wherein clause was well known in the art. More

² There appears to be no antecedent basis for the language "said controlling means" of dependent claims 2 through 4 in parent claim 1. However, what appears to be intended is that the language of the driving circuit including a means for substantially eliminating an increase should be recited in claim 1 to indicate that the driving circuit includes a means for controlling or a controlling means since the features recited in dependent claims 2 through 4 clearly relate to the modified aspects of the driving circuit referred to at the end of claim 1 on appeal.

specifically, the noted wherein clause recites "said driving circuit includes means for substantially eliminating an increase in voltage between said discharge electrodes and said data electrodes during the application of the discharge pulse."

It is clear from the claimed and disclosed invention that the claimed discharge electrodes relate to the anode and cathode of the claimed plasma cell and the claimed data electrodes relate to the data electrodes of the liquid crystal cell. There is recited in this wherein clause a structural relationship among the recited elements in the context of the included means for substantially eliminating an increase in the voltage between the recited electrodes during the application of a discharge pulse. Thus, the claim is more specifically concerned with the relationship of the voltages between the electrodes of the plasma cell and the electrodes of the liquid crystal cell rather than among the electrodes of any one of these cells.

Although both references are concerned about the voltage levels present within the overall display element as a whole,

Buzak focusses upon the relationship of the voltage levels between adjacent electrodes within the plasma cell rather than the relationship of electrodes from the plasma cell to electrodes of the liquid crystal cell. The examiner's position at the top of page 3 of the answer recognizes that Buzak does not teach the driving circuit as recited in the wherein clause at the end of claim 1 on appeal. Assuming for the sake of argument that it would have been obvious for the artisan to have combined the teachings of Iwama and Buzak, Iwama teaches simultaneously inverting an image signal, the anode potential and the drive voltage for the data signals. To the extent the examiner may be possibly correct in asserting that these teachings relate to substantially eliminating an increase in voltage between the discharge electrodes and the data electrodes, the reference Iwama does not address changing the potentials during the application of a discharge pulse which is required as well in the wherein clause of claim 1 on appeal. Therefore, inasmuch as both references fail to address the specific timing and voltage

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relationships required by the claim, the rejection must be reversed.

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In view of the foregoing, the decision of the examiner
rejecting claims 1 through 5 under 35 U.S.C. § 103 is
reversed.

REVERSED

PATENT

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JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF
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JOSEPH L. DIXON)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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ANITA PELLMAN GROSS)	
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